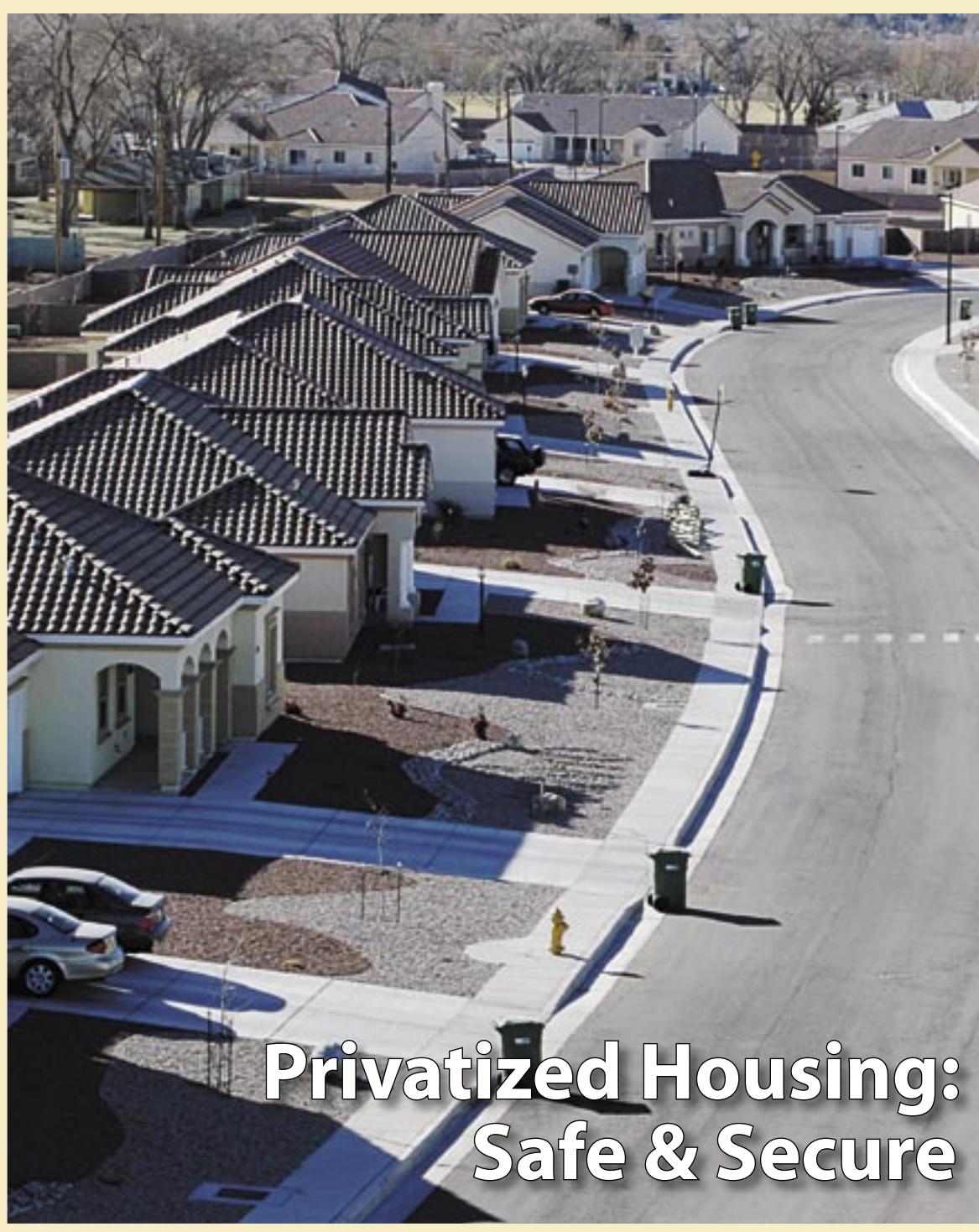


Air Force

CIVIL ENGINEER

Vol. 14 • No. 2 • 2006



**Privatized Housing:
Safe & Secure**

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Farewell to the Troops

Where has the time gone? Has it really been three years since I started talking with you all through the *AFCE* magazine? It feels like just yesterday that I stepped into The Air Force Civil Engineer position, and already it's time to pass the torch to Maj Gen Del Eulberg to carry on our civil engineer legacy: leading the charge to excellence, giving a minimum of 110%, and taking care of each other in all we do.

As I look back over the past 34 years, the one word that comes to mind is "family." You have been with me from the beginning. You and your predecessors "grew me" after I graduated from the Air Force Academy in 1972, through the company grade officer years at Langley AFB, Gila Bend AFAF, Osan AB, and Eglin AFB. People like you took the time to teach me and encourage my competitive nature. When I reached the field grade officer level, you taught me the challenges and rewards of staff officer life at the Pentagon, and the true meaning of teamwork during my squadron command tour at Sembach AB, Germany.

The tremendous opportunities continued, largely a reflection of your collective effort every single day. As the USAFE Civil Engineer and then the AMC Civil Engineer, I was fortunate to work with some of the most talented military, civilian and contractor engineers in the world. Your contributions helped "raise me" to lead as a general officer, and ultimately to reach the position I'm in today. Thank you for sticking with me from start to finish.

Together, we have seen the Cold War end and former Soviet Bloc countries enter the NATO alliance. We freed Kuwait in DESERT STORM, honed our contingency engineering expertise in ALLIED FORCE and transformed ourselves into an Air Expeditionary Force. When the unprecedented events of Sept. 11, 2001, ripped a hole in our nation and its sense of security, we responded with tireless support to the Global War on Terrorism. Each and every one of you—those in the field and at home station, as well as your ever-supportive family members—has my tremendous gratitude and respect for the sacrifices that you make each and every day.

Today, we have another opportunity to improve our Air Force and the way we do business. The Force Shaping Initiative challenges our current structure at the Air Staff, MAJCOMs and bases. We'll meet those challenges with a leaner force and optimized organizational structures to work smarter. The drive and initiative I've seen in the last few months has me convinced that we're headed in the right direction. Keep hustling!

This is my last note to you as The Air Force Civil Engineer: Thank you for your service to our Air Force and our great nation. It has been an honor and a privilege to work beside you all these years, one that words can only partially describe. Sallie and I will always treasure our active duty days and the "family" we've met along the way. We wish you all the best in your future endeavors and hope our paths cross again somewhere down the road.

From the Top



L. Dean Fox
Major General, USAF
The Air Force Civil Engineer

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*On the cover:
Privatized housing
at Kirtland AFB,
N.M., comes with
modern amenities and
Air Force safety &
security. (photo by
Ms. Lisa Cymmer)*

Military Housing Still Safe and Secure

Maj Bo Bloomer
HQ USAF/A7CHM

The Air Force has an aggressive program to privatize over 46,000 military family homes in land-lease ‘deals,’ successfully leveraging 11 private-sector investment dollars for each Air Force dollar. Military members and their families will now have access to modern, high-quality homes, leaving behind inadequate, sub-standard housing. But they won’t be leaving behind two things they’ve come to depend on from the Air Force: safety and security.

“We have not privatized our military family’s safety or security,” said Ms. Sandy Randolph, the Air Force Deputy Privatization Program Manager, headquartered at the Pentagon. “Like the rest of the base, they will get the same outstanding support from our Air Force security forces and fire department professionals.”

The privatization program is one tool the Air Force is using to meet the DoD’s strategic goal of eliminating all inadequate housing by 2007. The estimated \$5.6B the Air Force would need for major improvement or renovations to almost 45% of its 106,000 military family housing units far exceeds its out-year military construction budget. The privatization program allows developers to use Military Housing Privatization Initiative authorities to construct new homes and renovate some older homes, and to provide property management services for these homes, in exchange for 50-year land leases. A selected developer owns and leases quality housing to service members at housing allowance rates.

Security

Where the Air Force privatizes its homes on base (a few deals have homes located off base), reimbursable service agreements are created between the housing development’s project owner

and both the Air Force security forces and fire department organizations. Residents of privatized homes will still have uniformed or civilian Air Force security forces and fire protection organizations serving them, just as they had when living in previous Air Force-owned housing. But the importance of security within the housing privatization program does not end there.

To ensure the long-term financial sustainability of the Air Force privatization program, private developers have leasing flexibility in instances where housing occupancy falls below projected levels. If occupancy rates need to be increased through renting to non-base personnel, developers must move through a downward flow or “waterfall” of prioritized tenants to fill vacancies. Although the Air Force has a long history of non-DoD civilian employees working on its installations—even in 24-hour, seven-day-a-week situations—allowing them to live within the privatized housing community has proven to be a much more contentious subject.



Recently completed privatized housing (foreground) at Wright-Patterson AFB, Ohio, provides modern amenities at reasonable cost. (U.S. Air Force photo)

“A predominant myth of the resident ‘waterfall,’” Ms. Randolph said, “is that the private developer would allow individuals that pose security risks to live on base. This could not be farther from the truth. We have engaged in a very thorough outreach effort to ensure everyone knows these ironclad provisions—we deal with these perceptions quite regularly.”

When projected occupancy falls, the private developer may open the ‘targeted tenant’ list (below) up through priority # 7. If occupancy remains below projections for an extended period of time, the private developer, after consultation and approval from the installation commander, may seek tenants from the general public (priority #8) for a maximum one-year lease.

1. Referred Military Families (those eligible for base housing)
2. Other Active Duty Military Members
3. Federal Civil Service Employees
4. Retired Military Members/Families

5. Guard and Reserve Military Members/Families
6. Retired Federal Civil Service
7. DoD Contractors/Permanent Employees (US Citizens)
8. General public

If the need arises for “waterfall” tenants, the installation housing officer (acting in a new duty as the Asset Manager) works with the project owner to determine appropriate areas for them. The Air Force Instruction on privatized housing (AFI 32-6007) and the transaction documents for each privatization deal stipulate the background-checking procedures for the general public. The private developers provide, at their own cost, a full National Crime Information Center background check (see author’s note) to base leadership, who can then decide if an individual should be allowed access to on-base housing. Only within the last year was the use of NCIC background checks extended to installation force protection—including housing privatization.

Contractor employees are still putting the finishing touches on privatized housing at Kirtland AFB, N.M. (photo by Ms. Lisa Cymmer)



Soon-to-be-opened privatized military family homes at MacDill AFB, Fla., may look just like housing in the local community, but safety and security are still Air Force responsibilities. (photo by Ms. Lisa Cymmer)



Safety and Fire Protection

Just as with security, fire protection is provided by the on-base fire department on a reimbursable basis. At a recent fire at Hanscom AFB, Mass., the base fire department responded to a fire in a privatized home that was part of an eight-plex unit (two four-plexes separated by a mechanical room). Seven of the eight homes were damaged, requiring the private developer to quickly relocate those families to temporary quarters (in on-base lodging and at a nearby hotel). The private developer also immediately moved them to the top of the housing waiting list.

Future Privatization Efforts

Currently, 18 housing privatization projects have been completed. Air Force officials estimate that up to 12 additional projects will be awarded at 19 bases during fiscal year 2006, resulting in an additional 18,200 new or renovated homes. For the total construction development of nearly \$2.7B, the Air Force's investment is only \$190 million.

To date, private housing developers have spent \$2.57B to the Air Force's \$210.6 million. Each privatization project also provides an influx of capital and jobs for the local construction industry during the four- to six-year construction periods typically

encountered and through the long-term property management phase of a project's 50-year life.

"These privatization transactions present a 'win-win' situation: the service members and their families live in a quality home, and the private sector housing industry is afforded a reasonable profit in rebuilding, renovating and operating Air Force homes," said Col Michael J. Smietana, the Air Force's Housing Chief.

"We'll continue to look for additional opportunities and locations to partner with private developers where financially and operationally prudent."

Author's Note: NCIC is a computerized index of criminal justice information (e.g., criminal record history information, fugitives, stolen properties, missing persons). It is available to federal, state, and local law enforcement and other criminal justice agencies 24 hours a day, 365 days a year. (Information taken from the NCIC Web site: <http://www.fas.org/irp/agency/doj/fbi/is/ncic.htm>)

Maj Bloomer is a Housing Program Manager for Privatization, HQ USAF, Pentagon, Washington, D.C.

Engineering Weather Data

At the Air Force Combat Climatology Center, we don't forecast tomorrow's weather. But as the DoD's provider of climatological weather data, we do record it and keep it for posterity.

AFCCC has a product that may help CEs concerned with how weather might affect an engineering project. AFCCC professionals collect and maintain the information described in UFC 3-400-2, Design: Engineering Weather Data. This UFC gives examples of the type of engineering weather data available as well as instructions on how to use it. The actual data is available online at AFCCC's Web site, <https://www.afccc.af.mil>. MIL-STD 3007 directs the use of this UFC for all planning, design, construction, sustainment, restoration, and modernization of DoD facilities.

Some may remember the old Air Force Manual 88-29, Engineering Weather Data, also known as the Blue Book. It contained basic weather design criteria and temperature bin data. However, because the publication was printed, the amount of information it could contain was limited. Consequently, it was not possible to alert designers to specific conditions that could significantly influence building performance, increasing the likelihood of design failure. What was needed was more data describing the full range of weather conditions and more effective ways to communicate their significance to the designer.

Given the task of updating the Blue Book, a member of the Engineering Support Directorate at Headquarters Air Force Civil Engineer Support Agency led a team of representatives from AFCCC, the Army Corps of Engineers, the Naval Facilities Command, and Manson Grant consultants to develop a new weather manual. The team identified an extensive list of criteria and developed innovative ways to convey this information to the design professional. AFCCC then compiled the data and developed the software to create the necessary graphs, charts and displays.

The EWD comes from numerous sources—the most important being the years of daily weather observations stored in AFCCC's Surface Climatology Database. AFCCC also includes any available solar radiation data from the National Renewable Energy Laboratory, as well as the 50-year recurrence wind speed data from the American Society of Civil Engineers publication "Design Loads for Buildings and Other Structures." (Some of this additional data may not be available for all sites, particularly overseas locations.)

The EWD summaries contain many different data tables and graphs. One of the most informative is the Design Criteria Data Table (see page 9), with design values for many different meteorological parameters. Other popular graphs are the Long Term Psychrometric Summary and the Average Ventilation and Infiltration Load (see page 8), which help identify the significance of latent loads on heating, ventilation and air conditioning system design.

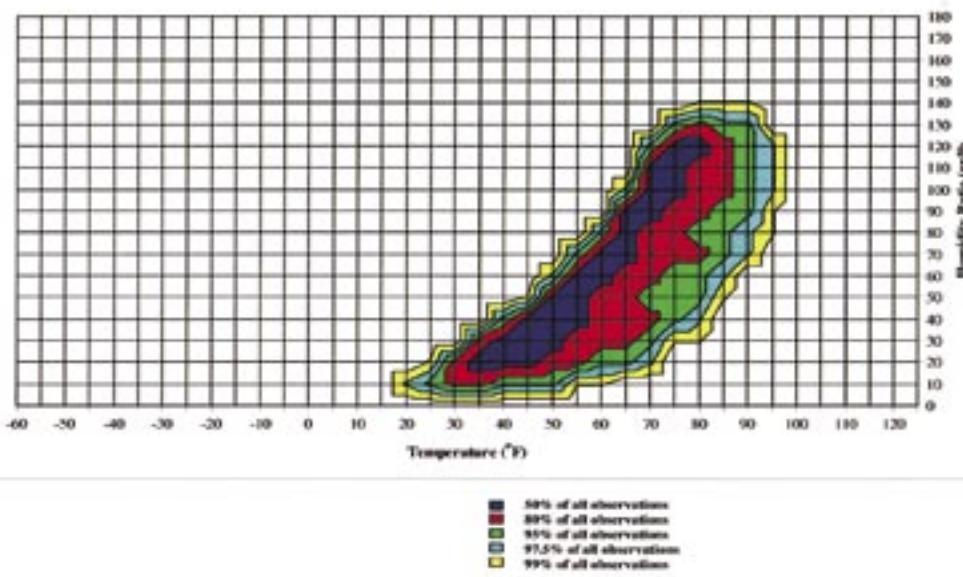
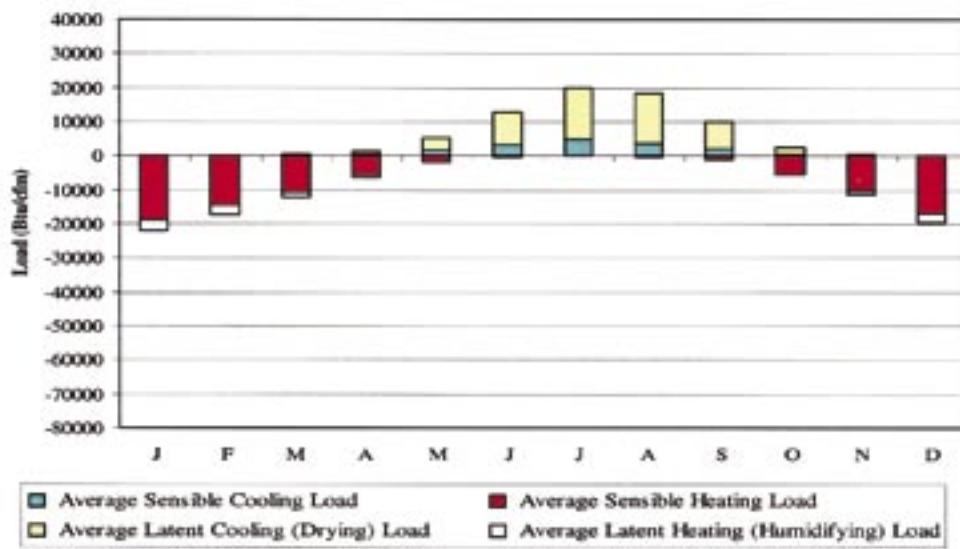
Also available are numerous other data tables and/or graphical plots relating to temperatures, dew points, precipitation, ventilation and infiltration loads. AFCCC's software summarizes prevailing seasonal winds and creates wind roses, graphical representations of the percent frequency of surface wind direction and speed. The EWD contains useful temperature bin data for estimating energy costs, as well.

Engineers working on a hospital renovation project recently used EWD to determine air distribution, energy and life cycle costs, heating/cooling controls, and various other items. Bases can use the heating and cooling degree data to help calculate savings from conservation efforts. One base MWR customer used the temperature and humidity data to determine how often they could use the snow-making machines on their ski slope. The Wind Summary Chart helps with preliminary screening for installing wind-generated power equipment. With many bases planning major construction projects

Capt Ben Edwards
AFCCC/DOPS
Mr. K. Quinn Hart, P.E.
HQ AFCESA/CESM

Data Graphs from the EWD Summary for Shaw AFB, S.C.—To achieve interior conditions of 75°F and 50% relative humidity requires cooling the air to a saturation temperature of approximately 55°F to reduce its water content (humidity ratio or HR) to 65 gr/lb. From the Psychrometric Summary graph at right, you can see that the area above the 65 gr/lb HR line represents almost one half of the graph. In other words, for Shaw AFB, dehumidification will be required over half the time in order to meet recommended interior design conditions. Note the wide range of sensible and latent loads the HVAC system must control. Requiring the designer to evaluate system performance at these various conditions will determine its effectiveness in achieving design requirements. To see the effect on energy consumption, look at the Average Ventilation and Infiltration Load graph for Shaw (below right) and you can see that the latent load can be more than three times the sensible load when conditioning outside air.

Long Term Psychrometric Summary

Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)

RH = relative humidity

Design Criteria Data Table for Shaw AFB, S.C.

Dry Bulb Temperature (T) (°F)	Design Value	Mean Coincident (Average) Values			
		Wet Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	100	76	97	8.5	W
0.4% Occurrence	95	76	104	7.5	W
1.0% Occurrence	93	76	107	7.3	WSW
2.0% Occurrence	91	75	106	7.4	WSW
Mean Daily Range	20	-	-	-	-
97.5% Occurrence	31	28	16	5.3	NE
99.0% Occurrence	27	24	13	5.2	NNE
99.6% Occurrence	24	21	11	5.1	NNE
Median of Extreme Lows	17	14	7	6.1	NW
Wet Bulb Temperature (T _{wb}) (°F)	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	81	91	139	6.3	SSW
0.4% Occurrence	79	89	129	6.3	SSW
1.0% Occurrence	78	88	126	6.3	SSW
2.0% Occurrence	77	86	123	6.2	SSW
Humidity Ratio (HR) (gr/lb)	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	151	85	1.00	4.7	S
0.4% Occurrence	137	83	0.90	4.6	SSW
1.0% Occurrence	132	82	0.88	5.2	SSW
2.0% Occurrence	127	81	0.84	4.8	SSW
Air Conditioning/ Humid Area Criteria	# of Hours	$T \geq 93^{\circ}\text{F}$	$T \geq 80^{\circ}\text{F}$	$T_{\text{wb}} \geq 73^{\circ}\text{F}$	$T_{\text{wb}} \geq 67^{\circ}\text{F}$
		100	1330	1218	2852

in the next several years, the use of EWD could greatly help engineers as they design and implement projects using our limited taxpayer dollars.

UFC 3-400-2, Design: Engineering Weather Data (available from <http://www.wbdg.org>), gives a complete explanation of the data in an EWD summary, suggestions as to its use, and a list of locations (CONUS and OCONUS) covered by the data. AFCCC's Standard Climatology Products Team produces and maintains over 1,100 EWD summaries in both English and metric units (approximately 500 in the United States and 600 spread throughout the rest of the world). For a current list of locations, access the Air Force Combat Climatology Center web page; click on Products > Search for Products and select EWD as the product. If an EWD summary isn't already available for your location, simply

submit a Support Assistance Request. The submittal form can be found under Services > Request Products > Support Assistance Request > Submit New SAR.

For further questions concerning application of the engineering weather data, contact Mr. Quinn Hart, HQ AFCEA at quinn.hart@tyndall.af.mil, DSN 523-6343 (850-283-6343 commercial). For questions regarding the collection and development of the weather data, contact the AFCCC customer support unit at doo@afccc.af.mil, DSN 673-9004/9003 (828-271-4291 commercial).

Capt Edwards is the chief of the Standard Climatology Products Team, AFCCC, Ashville, N.C. Mr. Hart is a mechanical engineer in the Engineering Support directorate at HQ AFCEA, Tyndall AFB, Fla.

“Something a Little Less Dangerous”

Sgt John L. Levitow’s Brief Career in Air Force Civil Engineering

Dr. Ronald B. Hartzer
HQ AFCESA/CEBH

Nearly every Airman knows the name Sgt John L. Levitow. As one of the few Air Force enlisted members to be awarded the Medal of Honor, his name has become synonymous with bravery, selflessness and education. Many are familiar with his 1969 medal-winning exploits in Vietnam as an AC-47 Loadmaster, but few know that he actually began his Air Force career as a civil engineer.



Born in Hartford, Conn., in 1945, Sgt Levitow attended design school and worked in a machinery company after graduating from high school in 1965. In 1966, three weeks before being drafted, Levitow decided to enlist. “I went down to the recruiter one day. I was going to join the Navy; I like water, right? I had a recruiter sitting with his feet up on the desk. He looked at me and said, ‘What in the hell do you want?’” Levitow walked out the door and into the neighboring Air Force recruiting office, where he enlisted on June 6, 1966, at age 20.

Following basic training, Sgt Levitow began on-the-job training as an electric power line specialist (542X1) with the 438th Civil Engineering Squadron at McGuire AFB, N.J. One day while working on some power lines, Sgt Levitow had a life-changing encounter with electricity. In his own words, “I had a bad experience where the power was not turned off when I thought it was, and it scared the hell out of me. I came down that pole and asked my squadron commander if I couldn’t cross-train into something a little less dangerous.”

Soon, he was headed to Vietnam to fly on Douglas AC-47 “Spooky” Gunships in his “less dangerous” career as a loadmaster.

Equipped with three SUU-11A 7.62 mm “miniguns,” the aircraft carried about 16,500 rounds of ammunition and approximately 48 MK-24 flares on a typical night mission. Each flare would last up to three minutes and produced a light of 2M candlepower. The delivery system was extremely simple, the loadmaster armed and dropped the flare out the cargo door when the pilot signaled by flashing a cargo compartment light.

On Feb. 24, 1969, then A1C Levitow took off on a mission with the call sign “Spooky 71.” The rest is history. As a result of his actions that night, President Richard M. Nixon presented the Medal of Honor to Sgt Levitow in 1970 (see citation).

The Air Force has recognized Sgt Levitow in several ways. The Levitow Honor Graduate Award is presented to the top professional military education graduate from Airman Leadership Schools across the Air Force. In 1998, Air Mobility Command named a C-17 Globemaster III “The Spirit of Sgt John L. Levitow,” the first such honor for an enlisted person.

He left Air Force service just prior to being awarded the medal, but dedicated the rest of his life to helping veterans. John Levitow passed away on Nov. 8, 2000, following a lengthy fight with cancer and is buried at Arlington National Cemetery.

Sgt Levitow never forgot his roots in Air Force civil engineering. When visiting bases, he often sought out civil engineers and retold the story of how his request to “cross-train into something a little less dangerous” led him to a date with history.



CITATION

For conspicuous gallantry and intrepidity in action at the risk of his life above and beyond the call of duty, Sgt. Levitow (then A1C.), U.S. Air Force, distinguished himself by exceptional heroism while assigned as a loadmaster aboard an AC-47 aircraft flying a night mission in support of Long Binh Army post. Sgt. Levitow's aircraft was struck by a hostile mortar round. The resulting explosion ripped a hole 2 feet in diameter through the wing and fragments made over 3,500 holes in the fuselage. All occupants of the cargo compartment were wounded and helplessly slammed against the floor and fuselage. The explosion tore an activated flare from the grasp of a crewmember who had been launching flares to provide illumination for Army ground troops engaged in combat. Sgt. Levitow, though stunned by the concussion of the blast and suffering from over 40 fragment wounds in the back and legs, staggered to his feet and turned to assist the man nearest to him who had been knocked down and was bleeding heavily. As he was moving his wounded comrade forward and away from the opened cargo compartment door, he saw the smoking flare ahead of him in the aisle. Realizing the danger involved and completely disregarding his own wounds, Sgt. Levitow started toward the burning flare. The aircraft was partially out of control and the flare was rolling wildly from side to side. Sgt. Levitow struggled forward despite the loss of blood from his many wounds and the partial loss of feeling in his right leg. Unable to grasp the rolling flare with his hands, he threw himself bodily upon the burning flare. Hugging the deadly device to his body, he dragged himself back to the rear of the aircraft and hurled the flare through the open cargo door. At that instant the flare separated and ignited in the air, but clear of the aircraft. Sgt. Levitow, by his selfless and heroic actions, saved the aircraft and its entire crew from certain death and destruction. Sgt. Levitow's gallantry, his profound concern for his fellow men, at the risk of his life above and beyond the call of duty, are in keeping with the highest traditions of the U.S. Air Force and reflect great credit upon himself and the Armed Forces of his country.

S/R&M: A Complete Solution

Capt Chrissy Cuttita
HQ AFCESA/PA

It was a trial by fire—or more accurately, water—that helped prove the success of the Air Force Civil Engineer Support Agency's newest mission: the Sustainment, Restoration and Modernization Program.

The agency acquired the S/R&M mission from the Air Force Center for Environmental Excellence in late 2004 and was feeling its way through the process of integrating it into AFCESA's business model when Hurricane Katrina hit, causing major damage to Keesler AFB, Miss.

“Responding quickly to Keesler’s needs after Katrina was a major test for us,” said Mr. Cliff Fetter, Chief of the Installation Support Directorate, “and I’m glad to say we passed. We’re continuing to help them bring their base back to ‘before Katrina’ condition, or better. But we do a lot more than disaster recovery.”

In fiscal year 2005, AFCESA awarded S/R&M contracts worth \$145M to enhance the maintenance, repair and modernization of existing Air Force facilities and infrastructure worldwide. Projects managed by the S/R&M staff also include roofing surveys, energy audits, and non-environmental construction.

Building on the first year’s success, AFCEA expects to award close to \$300M in S/R&M contracts in FY06. The majority of this is return business, indicative of high customer

satisfaction. “That says volumes about the hard work and dedication of the technical, funds management and contracting S/R&M staff,” Mr. Fetter stated.

“The subject-matter experts are here, so it was natural that S/R&M execution be moved here,” said



Mr. Norm Fowler, chief of the directorate’s Total Force Support Division. “Involvement by these SMEs in the S/R&M process gets the latest technical data into the projects early and reduces delays and redesign later. The result is a better product for the bases. We have our own contracting officers, financial managers, and cost estimators who are right here with the program managers, giving them the opportunity to have daily communication.”

When a base has a need, they discuss it with an S/R&M project manager to develop a statement of work. AFCESA cost estimators calculate the estimated price. “This makes our project manager an extension of the in-house base workforce,” said Mr. Fowler. “Our staff includes embedded Northrop Grumman contracted employees; they are all professionals providing excellent support.”

When Hurricane Katrina hit the Gulf Coast in late August 2005 and Keesler AFB in Mississippi suffered major damage, AFCESA’s S/R&M program was there to help. S/R&M contracts have helped support Keesler’s recovery and restoration efforts. Close to \$91M in contracts have been awarded or are in development, including these:

- \$28M+ for repairs to multiple facilities (three contractors/six task orders)
 - Dorms and VAQ and VOQ lodging
 - Hangars, supply warehouses, POL structures
 - Buildings for Wing HQ, Security Forces HQ, Squadron Ops
- Fire station; post office
- Marina offices, fishing piers, and arts and crafts center
- \$40M+ for restoration/remodeling of the medical center (includes >\$25M in structural damage repair and >\$7M in equipment replacement)
- \$5M+ for repairs to the Base Support Center
- \$4M+ for restoration of landscape throughout the base
- \$3M+ for communications re-wiring throughout the base
- \$3M+ for marina repair

In the second year of the S/R&M mission, AFCESA currently uses AFCEE's indefinite delivery-indefinite quantity contracts to sup-

At Hurlburt Field, Fla., the S/R&M program worked well as the contract vehicle selected for hurricane recovery, said Mr. Keith



port this effort. However, in the near future AFCESA will award its own up-to-10 year S/R&M Acquisition Task Order Contract with a \$10B ceiling. The SATOC process will increase competition and result in more cost-effective procurements with no degradation in quality.

"We've streamlined the acquisition process," said Ms. Gale Onorato, Northrop Grumman Mission Systems Engineer/Manager. "We simply need to know how the base wants us to support them, and, with good information, we can turn acquisition packages around within the goal timeframe of 30 days."

AFCESA has placed project managers on site in contingency situations to assist in recovery efforts. For example, some are at Gulf Coast installations needing restoration from damage caused by Hurricanes Ivan, Dennis and Katrina. Approximately \$60M has been spent on natural disaster recovery, which has developed into a key capability for the agency.

"We have minimum change orders in hurricane recovery because we work hard to get it right from the beginning," said Ms. Onorato. "We do everything but make the decisions for the base. The more definitive the base decision team is, the better the products we provide."

Cutshaw, 16th Civil Engineer Squadron engineering flight chief.

"The beauty of the S/R&M contracts is that full-blown designs are not required," said Mr. Cutshaw. "All it takes to get a project underway is to send the funds to AFCESA and provide a statement of work, typically a 35% design. Once a contractor is selected and the project awarded, we manage the day-to-day construction activities locally. It may appear to cost a little more using the S/R&M program but you receive the additional support from AFCESA in administering the contracts and the contractors actually develop the implementation plans."

"Customers come to us needing varying degrees of support, and we work with them to get the project finished," said Mr. Fowler. "We're really proud of how we've helped Keesler after Katrina, but you don't need to wait for a hurricane to call us."

The S/R&M team can be contacted by calling any of the project managers or one of the division chiefs (Mr. Norm Fowler, DSN 523-6345, Mr. Mike Giniger, DSN 523-6520, Mr. Frank Simas DSN 523-6459, or Mr. Drew Arp, DSN 448-2457). The AFCESA Reach-Back Center is also available by calling 1-888-AFCESA1 (international DSN at 312-523-6995) or emailing AFCESAReachBackCenter@tyndall.af.mil.

The S/R&M Program covers a range of operations, from disaster recovery to utilities revitalization to non-environmental construction.

(U.S. Air Force photos)

A New Path to Maintenance

Maj David P. Wilder, R.A.

460th CES/CEO

Dr. AnnMarie O'Malley

Tetra Tech, Inc.

Mr. Anthony Fontanetta

Tetra Tech, Inc.

Air Force base civil engineers have historically struggled with balancing the advocacy of infrastructure improvements with fiscal realities, all the while being sensitive to leadership demands. Tasked to sustain and modernize their base's infrastructure system, CEs face the difficulties of aging systems, limited assets and a relatively low position on the resource distribution list, much like the engineers in any midsized county municipality.

Air Force installations typically address facility and infrastructure sustainment, modernization and restoration needs through in-house reports and command staff assistance visits, or through contracted efforts which prioritize and schedule projects while creating five-year maintenance plans. These plans present a clear action path, but because of the aforementioned difficulties, they often become stagnant: Projects are transferred from one year to the next and take no account of fiscal realities or system conditions based on a recurring work program.

Faced with these challenges at one of the Air Force's fastest growing installations, personnel at Buckley AFB, Colo., have developed the Infrastructure Investment Program, an innovative approach to infrastructure planning, development and execution. The IIP focuses on planned predictive/preventive maintenance.

The initial step in developing an IIP is the review and assessment of current systems, but with a twist. Normally, limited resources make internal base-wide assessments of current systems unfeasible. Information usually comes piecemeal from previous investigations and requests for service, not exactly a "LEAN" approach, or one that results in a project listing with enough detail for project execution, fund advocacy or budget defense.

At Buckley AFB, CEs have changed their assessment approach. They teamed with private sector experts—contractors from Tetra Tech, Inc.—to perform detailed utility and facility assessments, which will be used to derive a technically driven formula for prioritizing needs for each system. The resulting

project listing can then be lined up with programmed funding, allowing for individual project requests rather than lump sum budget requests, and reducing the competition with other non-S/R&M wing priorities.

The assessment team reviewed years of work order logs to identify recurring issues and interviewed system craftsmen, shop personnel and onsite engineers to create a corporate knowledge base and a more accurate baseline. Air Force instruction, commercial practices, and federal standards were all taken into account. This information is archived and available for reference by private industry functional area experts during detailed onsite field verification/inspections. As part of the IIP, a customized Microsoft Access database was developed, which incorporates all information used or generated during the IIP.

The first stage of the assessment prioritized the facility-specific systems, including HVAC, electrical, roofing, alarms, interior finishes and exterior protective coatings, for 112 buildings. The Recurring Work Program covering continual preventive maintenance for these systems was cross-referenced with the work order log research, onsite inspections, and archived information to establish a baseline and to balance system age with recurring maintenance. The results yielded a quantitative value for system life expectancy, an invaluable reference for resource allocation planning.

In the same manner as facility systems were addressed, stage two of the assessment process will focus on the needs of the installation's external utility systems, including water storage and distribution; wastewater; storm water drainage; electrical distribution; natural gas; and cathodic protection infrastructure.

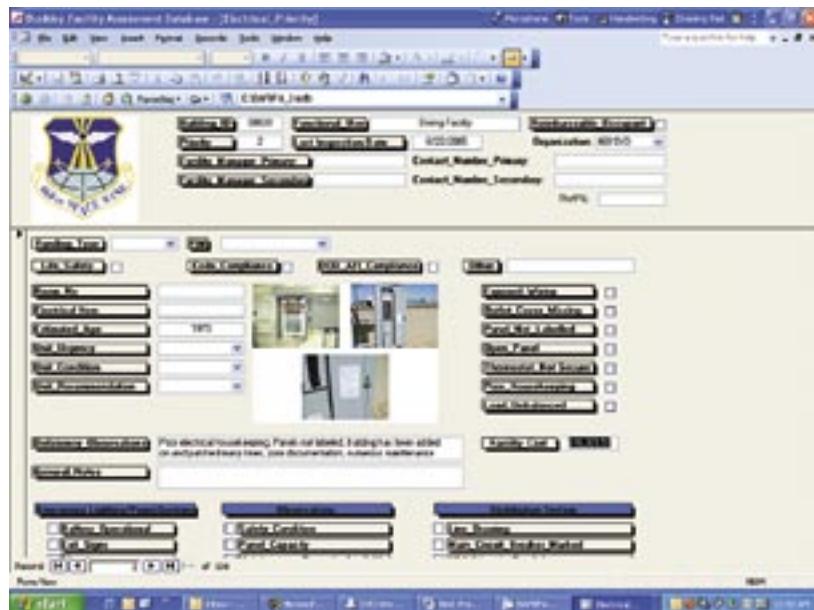
Once all facility and infrastructure assessments are completed, as the final step in the IIP, an opportunity matrix will be created that prioritizes projects within the customary five-year plan. In addition to numerical ratings (maximum score of 100; lower = greater priority) calculated by industry experts for each project, this matrix

The “all-inclusive” Infrastructure Investment Program gives Buckley AFB CEs a better planning tool

takes into account past issues and future planning, up to and including the previously un-addressable “leadership interest items.”

The SRM program built on the IIP-generated five-year plan can be bought out with yearly funding from headquarters. In September 2005, a contract was awarded through the Air Force Civil Engineer Support Agency for Buckley’s facility sustainment work. Facility projects were arranged as pre-priced indefinite delivery-indefinite quantity line items available for implementation by the base at their discretion. Initial funding of \$714,000 yielded 16 roof projects, 5 interior renovations and 6 HVAC turnkey projects. With an additional \$896K in straddle-bid funding, facility maintenance has been effectively “bought out” until 2009, allowing a focus on infrastructure to catch up to a solid facility condition baseline.

The IIP Access database gives Buckley’s CEs a unique tool that allows a greater degree of flexibility and program insight than previously available. Major input sources for the IIP can be easily tracked, including RWP; shop work scheduling; method improvement evaluations; warranty information; CE work request process; reimbursable clients; and programming functions. Input of this “living record” allows the database to manage the 5-Year Plan so



This is a sample screenshot of the software developed to track and update and prioritize electrical distribution maintenance for either in-house or contract execution in a predictive/preventive maintenance cycle. (courtesy 460th CES)

that RWP progress or regression automatically adjusts the IIP list of projects and priorities. Reports (work requests, base-to-command briefs, installation readiness reports, etc.) are easily generated—a valuable tool for project programmers and leadership weighing fund-allocation options. The data concerning facility conditions are tied to the base’s GeoBase system and is compatible with ACES, assuring future integration with CE operations.

The IIP database also acts as a tracking tool for system upkeep, maintenance and replacement. The platform can be updated with craftsman maintenance practices and industry standards. Inefficient systems are easily identified and system life expectancies are automatically recalculated, which is especially important for mission-essential systems. Pre-programmed notifica-

tions alert users to pending warranty expirations, upcoming upgrade projects, and systems entering the last 20% of their life cycles—all important information for planning and scheduling.

Buckley’s IIP, with its unique teaming of base CEs and private industry experts, makes the S/R&M process more accurate and efficient. The resulting approach to facility and infrastructure health is more holistic and has helped eliminate the need for recurring “band-aid” programming.

Major Wilder is commander of the Operations Flight, 460th CES, Buckley AFB, Colo. Dr. O’Malley is the director of USAF Infrastructure Programs for Tetra Tech, Inc., in Lynn Haven, Fla. Mr. Fontanetta is a project manager for Tetra Tech, Inc., in Aurora, Colo.

CEs Still Have Aircrew Mission

Lt Col James P. Zemotel
USSTRATCOM/J643

The whine of the engines increases as the big jet lumbers down the runway. At what seems to be too slow a speed, the E-4B raises its nose off the ground and becomes airborne. The seatbelt sign shuts off as soon as safety allows and a flurry of activity begins as another mission gets underway. There, sitting in the center of the modified Boeing 747-200, among a crew of 60-plus personnel, sits the lone civil engineer officer. “Doing what?” you might ask. Only what I think is the best job—and best kept secret—in the CE career field.

The job title is Global Capability Assessment Engineer. The mission is to quickly and accurately determine the status of military and national assets following catastrophic events—normally in the realm of weapons of mass destruction, although natural disasters garner a share of our time as well. This broad concept of Residual Capabilities Assessment—of which GCA is the main component—is critical to America’s senior decision-makers. Our primary customers are the President, the Secretary of Defense, and the Chairman of the Joint Chiefs of Staff.

All of this takes place aboard a truly amazing aircraft—the E-4B. Assigned to Offutt AFB, Neb., E-4Bs serve as the

National Airborne Operations Center. Those among us who are a little longer in the tooth may have known it as the National Emergency Airborne Command Post, or NEACP (pronounced “kneecap”), the aircraft the press dubbed “The Doomsday Plane.” In case of national emergency, the E-4B serves as the nation’s premier—and most survivable—command, control and communications center to direct U.S. forces, execute emergency war orders, and coordinate actions by civil authorities.

The main deck of the E-4B is divided into six functional areas: command work area, conference room, briefing room, operations-team work area (battle staff), communications area, and rest area. The E-4B has an electrical system designed to support advanced electronics, electromagnetic pulse protection, and a wide variety of new communications equipment. Other improvements include nuclear and thermal effects shielding, acoustic control, an improved technical control facility and an upgraded air-conditioning system for cooling electrical components. An advanced satellite communications system improves worldwide communications between strategic and tactical satellite systems and the airborne operations center. To provide direct support to the



An Air Force E-4B—a modified Boeing 747-200—takes off from Dobbins ARB, Ga. (photo by Mr. Frank J. Mirande, © 1996)

President and the Secretary of Defense, at least one E-4B is always on alert at one of many selected bases throughout the world.

So, you may be thinking, “Sounds awesome. How do I become part of the team?” It’s not easy. For starters, there are only three CE officer NAOC billets (X32E) in the Air Force. Maj Ron Shankland (recently retired) served on Operations Team One and had the most time aboard the NAOC—over 200 missions. His replacement, Maj Chaz Williamson, who recently completed training and joined OT-1 on Feb. 1, 2006, logged just under 20 missions. Capt John Sevier is the CE officer for OT-2 and has over 100 missions under his belt. I am the RECA/GCA expert for OT-3; I recently completed my 92nd mission.

To fill one of these critical billets, GCA engineers must obtain the proper clearances. TS-SCI/SIOP/ESI is just the beginning of the clearance “alphabet soup.” To upgrade a clearance from Secret takes approximately 16 months.

Maj Williamson, Capt Sevier and I each came from diverse CE backgrounds, but now serve in X32E billets. We all had to become RECA experts first. We spent a great deal of time mastering computer programs that model the effects of WMD attacks. We also spent months learning about nuclear weapons and their effects, as well as aspects of proliferation, terrorism, and response. It was only after our RECA certification that we could even begin our aircrew training.

We had to pass a Class-III flying physical as well as a “flight” in the altitude chamber—the make-or-break physiological portion of the training. The other CE “ground pounders” and I also had to go through training in Basic Combat Survival, Local Area Survival, Water Survival, Emergency Egress, Aircraft Equipment, and more. Finally, after a nearly six-month process, we each joined our respective operations teams. But the training didn’t stop there. Each of us qualified to be a Watch Officer aboard



the aircraft. Several times during each alert we spend a shift on the aircraft assuming responsibility for ensuring the survival of the \$800M aircraft and its 64-person crew. Finally, we trained for a certification in NAOC Current Operations, becoming experts in Integrated Tactical Warning and Attack Assessment. Yes, it sounds like a lot of work, but it’s worth it.

Without hesitation, Maj (ret) Shankland, Capt Sevier, or I will tell anyone who asks that this is the best job we’ve ever had. And though he’s still “green” to NAOC, Maj Williamson seems sure to follow suit.

We work in a truly Joint environment within the DoD—making critical assessments and decisions alongside commissioned officers and enlisted members from the Army, Navy, and Marines. Our immediate and direct influence on decisionmakers at the nation’s highest levels provides a unique challenge.

Are you ready? Can you handle the responsibility? If so, keep your eyes open when it’s time to PCS. Ask your assignments representative if there happens to be an X-coded billet at Offutt AFB. Maybe you’ll become one of the lucky three.

Lt Col Zemotel is currently assigned as the Mission Assurance Branch Chief in USSTRATCOM’s Joint Force Component Command-Space and Global Strike, and is also the Lead NAOC GCA Engineer.

From Left to Right: Lt Col James Zemotel, Maj (ret) Ron Shankland and Capt John Sevier after the major’s final flight bosedown by the Offutt AFB Fire Dept. (U.S. Air Force photo)

Fare thee well, sir.

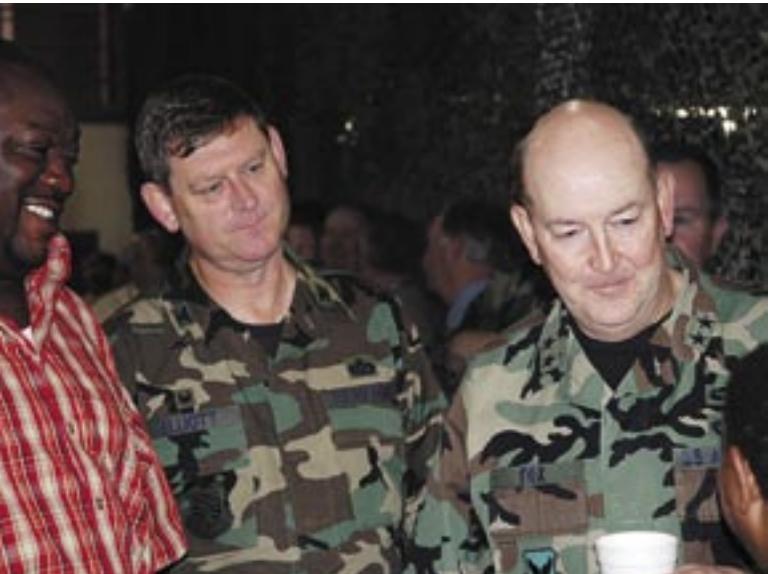
*May the road rise up to meet you, and the wind
be ever at your back...*

Maj Gen L. Dean Fox retires in August, culminating a career of service to the Air Force and the nation that has spanned 34 years. The last three years have been distinguished by his service as The Air Force Civil Engineer, leading an Air Force career field of 60,000 personnel.

Born in Georgia to a family with a history of military service, Maj Gen Fox continued the tradition: He was commissioned in 1972 following graduation from the Air Force Academy with a B.S. in civil engineering. From his first assignment with the 4500th Civil Engineering Squadron at Langley AFB, Va., to his current pinnacle position at the Air Staff, Maj Gen Fox's career is notable in the breadth of civil engineering positions he has held at base, major command and headquarters levels. He was the Command Civil Engineer at two major commands: U.S. Air Forces in Europe and Air Mobility Command.

During Maj Gen Fox's tenure as The Air Force Civil Engineer, there was an exponential increase in the requirement for Air Force civil engineers for contingency operations, in support of Operations ENDURING FREEDOM and IRAQI FREEDOM. His leadership during this demanding time has been both dynamic and concerned, with mission needs and warfighter needs always at the forefront. At the same time, his commitment to quality for the Air Force's bases, its Airmen and their families around the world created the largest housing program in Air Force history, one of the largest military construction programs in the last 15 years, an award-winning energy program, and an extraordinary stewardship of the environment.

To Maj Gen Fox, his wife Sallie, and their family—best wishes in your new adventures and thanks for a job well done!





Out-Planning “Murphy”

Capt Alesandra Neiman
27th CES/CEC

The first stop for Service members injured in Iraq is usually the Air Force Theater Hospital in Balad—a field hospital run under austere conditions. But thanks to members of the 332nd Expeditionary Civil Engineer Squadron, the conditions are now a little less austere and the hospital’s staff no longer has to work in ankle-deep water, as they sometimes did in the rainy season.



Balad AB’s field hospital is one of the busiest in the theater. (photo by TSgt Denise A Rayder)

forefront when the 332nd ECES—the Red Tail Engineers—assumed responsibility for replacing the hospital’s dry-rotted, leaking tents. Time and space limitations meant that all logistical factors had to be carefully covered, so a new planning team revisited previous planning efforts. The new team had three main players: Capt Chess Martin (medical group), Capt Jayson Currier (communications squadron), and myself (332nd ECES).

Challenges

The easiest construction method—erecting new tents at another location within the base or the hospital compound—was out of the question. Space just wasn’t available, so we couldn’t relocate the hospital in a single move. We would have to demolish and build the

new tents in place while ensuring no loss in the hospital’s mission capability. There could be no downtime for the intensive care units; required construction had to start and finish within a single 24-hr period for each ICU tent.

The rainy season was approaching, so our construction timeframe was to be short. Not only were we risking tents being down during heavy rainstorms, but the hospital sat in a basin with a drainage problem. We needed to eliminate this problem with the new construction.

We also had to completely rebuild the hospital’s communication systems, configuring a new system. The system had to match all functions that would be relocating both temporarily and permanently, while keeping the hospital’s control center fully operational.

Planning

Capt Martin took on the challenges of identifying possible “swing” spaces and what functions the hospital could consolidate, move, or just do without, and for what lengths of time without losing mission capability.

With that information, Capt Currier and I worked the construction and communications plan. We knew we’d have to work our way out from the hospital’s center, from the new communications node and the ICU tents. By doing that and creatively using swing and storage space, we could free up almost half of the hospital for one phase, most of the other half for another phase, and then group the remaining tents into twos and threes.

Teamwork

The overall plan was set, but construction details needed to be hammered out. Drainage was first: The whole area was fairly uniform in elevation, but it rose slightly around the edges of the site with nowhere

for water to drain. Protective sandbag walls around existing tents complicated the problem; water collected in the narrow space between the walls and the tent sides during the rainy season. Our Utilities and Heavy Repair experts came up with the solution: 2-ft Hesco barriers stacked to the proper height, with lengths of pipe pushed through the bottom at regular intervals along the length of the tents to allow water to escape into the alleyways between tents.

Throughout the project, our Electrical and Power Production leads maintained power for the three operating rooms, two CT scanners, and uncounted critical life-support machines. Our Heating, Ventilation, and Air Conditioning team created a stockpile of viable environmental control units, ensuring that temperatures for people and equipment stayed optimal.

We erected tents we'd never seen before—a cross between standard TEMPER tents and the newer Alaskan shelters—customized for the medical mission. In fact, this was the first time these tents would be fielded on a large scale. Our Structures team worked with the Medical Logistics Flight and the tent manufacturer to make sure we were prepared and efficient.

Breaking "Murphy's Law"

The whole project was estimated to take 16–24 days; we did it in 13. We replaced 46 tents, placed 20,000 sandbags, re-routed 12,000' of power cable and installed over a mile of interior lights and electrical wiring. We filled miles of Hesco barriers, built interior walls, and even painted the floor of the emergency room. All the while helicopters landed continuously, bringing patients that were wheeled back and forth within the hospital, around and through construction areas.

The critical element to our success was flexibility. By involving our experts early

in the planning phase, we had alternative options that let us deal quickly with difficulties that cropped up during execution.

There is always a deep sense of satisfaction to completing good work, but this project was more than a successful plan and execution. We saw injured Americans, Coalition members and Iraqis being treated within the very walls we were erecting. Nothing is as fulfilling as knowing your work contributes to saving lives and healing people.

Capt Neiman is the Engineering Flight Chief, 27th CES, Cannon AFB, N.M. She was the Operations Flight Chief for the 332nd ECES, Balad AB, Iraq.

Stages of construction: From sand-filled Hesco barriers (foreground) to framing (middle) to skinning the new tent structures (background). (U.S. Air Force photo)



Keeping It Cool: HVAC in Iraq

MSgt Jon Hanson
407th AEG/PA

Most people either love them or hate them.

Maybe it isn't that melodramatic, but when people are sweating at their office or trying to sleep after duty hours, they don't have many good things to say about the heating, ventilation and air conditioning, or HVAC, shop.

"We take one day at a time," said MSgt Kevin Meyer, 407th Expeditionary Civil Engineer Squadron HVAC shop noncommissioned officer in charge. "I have very knowledgeable and concerned individuals who know the workings of HVAC equipment and how to keep our fellow Airmen comfortable while dealing with the heat, sand and bugs."

"Personally, I think half the people probably hate us," said MSgt Meyer, who is deployed from the Indiana Air National Guard. "But what they don't realize is this equipment is very old, and we keep nursing these units back to health; they don't repair themselves."

During this rotation, the 10-person shop has fixed more than 400 ECU units, air conditioners and refrigerators, MSgt Meyer

said. They also service and do routine maintenance on every unit each month.

Blocked air ducts, sand and weather cause wear and tear on the electrical components.

"This job is harder to do here mainly because of the different climate," said SSgt Steven Reed, another HVAC specialist from the Indiana ANG. "Dust and sand are constantly being sucked into condenser coils, and we are dealing with hotter temperatures than back home."

It isn't just dust being sucked into the units. The shop has pulled out other items, from ping pong balls to soccer balls.

"One of the units that we brought back to our shop to repair (had) at least 50 Styrofoam cups in the return section of the unit," said MSgt Jeffrey Winchester, who has been doing HVAC work since joining the Vermont ANG in 1985. "It looked like an entire package of cups had gotten sucked into the return air duct."

Most jobs in a deployed location can be challenging, but they can be rewarding, too.

"You can't just go downtown if you don't have the correct parts," said MSgt Winchester. "But it is extremely rewarding when you consider we are a 100 percent Air National Guard shop. Some (of the HVAC specialists) do not do this sort of work for a living, and now they can go to a unit that is not operating properly, troubleshoot and repair it."

TSgt Chuck Biever, with the 407th ECES heating, ventilation and air conditioning shop, removes a condenser fan motor for replacement at Ali Base, Iraq. He is deployed from the Wisconsin Air National Guard's 128th Air Refueling Wing. (photo by author)



Response Teams Prepare for Chemical, Nuclear Threats

In an abandoned building on the outskirts of town, a lab sits fully stocked and prepared to produce chemical weapons of mass destruction. A tip leads the Air Force Office of Special Investigations to the location. Chemical, Biological, Radiological and Nuclear defense teams suit up and prepare to raid the “hot zone” and dismantle the threat, safely and without disturbing the chemicals that lie inside.

At Kirkuk AB, Iraq, this is just an exercise, but one that prepares CBRN teams for the real world.

“This particular scenario is based on a realistic threat to our local area of operations,” said MSgt Daniel Copsey, 506th Expeditionary Civil Engineer Squadron readiness flight. “The team formulated a response plan of execution for detection, identification, sampling and decontamination for personnel.”

The exercise also provided time to practice the tactics, techniques and procedures for planning and executing a response to potential WMD or their components.

“These procedures are very technical and involve a lot of equipment and logistical support,” MSgt Copsey said. “The TTP’s must be [practiced] to keep personnel technically sharp and to get acclimated to the environment inside these protective suits.”

A number of factors determine who responds to the scene. In this scenario, when CBRN teams took action, two teams responded to the threat—an entry team and a sample team. Entry team members surveyed the room and identified toxins present.

The entry team determines the level of threat present at the scene and takes pictures as evidence and for future training. Then, they set up the work area for sampling and vapor detection and prepare for the next team. In this scenario, the threat was reduced, allowing the sample team to downgrade their personal protective equipment,

which is important for mobility since entry teams must contend with uncomfortable, but fully protective, Level A suits.

“Events like this test your physical stamina and mental awareness,” said SrA Estevan Trujillo, 506th readiness flight. “You are looking out at the world through a little window in the suit, and the heat, weight and difficulty can impair your mental awareness.”

After the entry team’s assessment, the sample team was able to collect the needed samples, which allowed them to dismantle the lab. Members of the entry team briefed the sample team on the hazards present.



Working with the entry and sample teams, the 506th ECES fire department provided decontamination at entry control points and worked with the readiness and bio-environmental flights for command and control at the scene.

“The exercise tested our ability to work with other base agencies and provide needed assets for their operation in a support role,” said MSgt Peter Ruddle, assistant chief of operations at the fire department. “This allowed firefighters to set up in an unusual environment and test their skills.”

Real-life exercise scenarios like this allow responders to prepare for real-world events, when there’s more than just a bad write-up on the line. In addition, it allows Airmen who have come from different bases and backgrounds the opportunity to work together as a team.

SSgt Kristina Barrett
506th AEG/PA

During an exercise at Kirkuk AB, Iraq, SSgt Jimmy Cole keeps in contact with response teams at the site of a suspected chemical lab. SSgt Cole is a crash truck crew chief with the 506th ECES fire department.

(photo by A1C JoAnn White)

Eglin Firefighters Test Protective Gear

Ms. Lois Walsh
96th ABW/PA

Being a firefighter is arguably one of the most physically demanding jobs in the military. For that reason, the Air Force is finding ways to make the job easier.

Sixteen firefighters from Eglin AFB, Fla., are testing new gear that may increase comfort, mobility and mission effectiveness for more than 3,600 active duty and 2,800 reserve firefighters in the Air Force. Air

Combat Command is the lead major command for this test because its responsibility includes management of all chemical warfare equipment in the Air Force and the joint arena.

According to CMSgt Joseph Rivera, the Air Force Civil Engineer Support Agency's Fire Emergency Services program manager, the firefighters are testing a potential upgrade to the joint firefighter integrated response ensemble, or JFIRE,

by replacing the existing chemical protective overgarment with a lighter chemical protective undergarment. Basically, the new CPU will replace the existing CPO when firefighters are dressed in various mission-oriented protective postures, including MOPP-4 fire fighting mode. Currently, firefighters are required to wear their chemical gear under silver proximity suits. If the new CPUs are approved, they will be worn under battle dress uniforms which will be covered with the familiar silver suits when responding to emergencies.

"JFIRE allows firefighters to egress aircraft under MOPP-4 conditions or respond to other emergencies with toxic atmospheres. The ensemble allows firefighters to transi-



The CPU pictured consists of jacket, trousers, balaclava, gloves and boot liners. It's manufactured from a durable composite fabric containing polymerically encapsulated carbon for the adsorption of chemical warfare agents. (photo courtesy Lanx Fabrics)

tion from filtered canister air to supplied bottled air when operating in oxygen-deficient environments, or where superheated air and gas exist," the chief said.

CMSgt Rivera said the CPUs—which look like a hooded, fitted jogging suit—are lighter, and the mesh-like design breathes, which makes it cooler. Test engineers from Eglin's 28th Test and Evaluation Squadron are making sure that's true.

2Lt Stacy Baber, squadron program manager, is closely monitoring the firefighter's physical response while wearing the CPU. Using heart and respiratory rates, dermal skin temperatures and times running an obstacle course, she and her team are tracking data results. She enlisted the help of Det 1, 823rd RED HORSE Squadron, at Tyndall AFB's Silver Flag Site to design the course. Some tasks the firefighters are required to perform include dragging a charged hose line and 150-pound victim, a spreader tool carry, and three consecutive trips up and down a ladder. All of this is accomplished while the firefighters are fully dressed out in gear that can weigh as much as 68 pounds.

"Using the design, we can randomize testing to see if the test data confirms what we're being told, that the suit increases evaporative cooling," 2Lt Baber said.

TSgt Christopher Proctor, 96th CES firefighter, said it was a privilege to test the suits for the Air Force, especially since they could potentially be used by everyone in the Air Force fire and emergency services. He said he's worn the standard JFIRE many times in his 17-year career. "I like the CPU," he said. "It offers more maneuverability and less resistance, plus it's not as bulky."

The test program ran for one week. If approved, the CPUs could be in firefighters' hands in the near future.

Bright Lights, Big Savings

Traffic signals... as we drive cars or cross streets we're all mindful of them, but most of us never really think about what it costs to run them. These signaling devices are actually big energy consumers, costing Air Force bases thousands of dollars every year.

Mr. Steve Hall, traffic management specialist for the 78th Civil Engineer Squadron at Robins AFB, knows too well what it takes to keep the base traffic signals up and running. He manages traffic lights at 11 intersections located throughout the Georgia base. Eleven may not seem like many, but those intersections equate to over 250 light bulbs that needed replacement at least once each year. Since energy consumption for each light bulb was 135 watts, the total annual energy cost for traffic lights alone topped \$20K.

In 2004, Mr. Hall initiated a plan to replace all 135-watt incandescent-type bulbs in the traffic lights with new lamps containing arrays of light emitting diodes or LEDs. Small but powerful, LEDs are long-lasting electronic lights that are also energy efficient. They consume less than 15 watts of electrical power, have an average life span of 10 years, and are generally brighter because they fill the entire fixture area.

LED retrofits have now replaced all the incandescent lamps in Robins' traffic lights, and energy costs for traffic light operation have dropped to a little over \$2K per year.

"We also save a lot of money in maintenance," said Mr. Hall, "because we're not out changing old incandescent traffic light bulbs several times a year. We don't have to modify the street light fixture at all—replacement takes about 10 minutes and it costs us about \$135 apiece for the retrofit LED assemblies."

Because of their low power requirements, LED installations also open the possibility

of using solar panels for power instead of running dedicated electrical lines, an especially cost-efficient measure in remote areas.

But Robins' plans for energy savings from LEDs don't stop at the traffic lights. Mr. Hall has installed LED speed limit signs in school zones and other high pedestrian traffic areas for additional safety emphasis. Warning signals at the base fire stations now use LEDs powered by solar panels for complete stand-alone operation.

"Cost of operating was our main motivation for the LED retrofits," said Mr. Hall. "The large savings in maintenance was an unanticipated benefit but very welcome. And it's wonderful not to have to be out there regularly changing light bulbs in a busy intersection."

Additional information on these types of systems and their applicability can be obtained from the author at HQ AFCESA (daryl.hammond@tyndall.af.mil; DSN 523-6352; Comm: 850-283-6352).

Dr. Hammond is The Air Force Electrical Engineer. He works at HQ AFCESA, Tyndall AFB, Fla.

Dr. Daryl Hammond, P.E.
HQ AFCESA/CESM

New LED signals at Robins AFB, Ga., are both brighter and more energy-efficient than older models that use incandescent bulbs. (photo by the author)



Altus Energy Costs No Longer Soaring

Maj Dawn M. Davis
97th CES/CEO

Warren "Bron" Howard remembers the old days of fluorescent lighting at Altus AFB, Okla. "We were literally in the dark," the base's energy manager said.

That was before an energy retrofit replaced the lighting systems in 93 of the base's buildings with efficient, high-output T5 and T8 fluorescent lighting. It is just one part of an energy conservation project that is expected to save the Air Force \$6.5M in energy costs over the next 15 years.

Altus awarded an energy savings performance contract to Honeywell in March 2005 to provide infrastructure improvements worth \$3.7M. Work planned under the ESPC will impact more than 100 buildings at the base and includes lighting; heating, ventilation, and air conditioning; building control; and water conservation upgrades.

The project construction/installation was completed in January 2006, and the resulting energy savings are expected to pay for the program. The contractor guarantees the savings and will make up the difference if the results are not met.

"We left no stone unturned when it came to identifying savings opportunities," Mr. Howard said. "The money saved through the contract will help us make the improvements

In this hangar at Altus AFB, Okla., new high-efficiency, high-output fluorescent lighting is easier on the checkbook as well as the eyes. (photo courtesy Honeywell)



without affecting the operating budget, so it's really a win-win for those on the base and in the surrounding community."

The contract is helping the base meet energy efficiency goals mandated by the Energy Policy Act of 2005, which requires federal agencies to reduce energy use 2% per year based on a 2003 baseline.

The energy-saving measures often come with other benefits. The T5 and T8 lights now provide lighting levels that meet industry standards. Lighting in the hangars has improved dramatically, an important feature for the employees who work in them.

The ESPC also includes critical building and utility systems upgrades to further reduce the base's operating costs.

The contractor upgraded building control panels and installed an integrated building management system to provide centralized control of HVAC and energy management technology at nine key buildings. Operators can set back temperatures when the buildings are not in use, reducing energy and equipment run-time and extending the life of the equipment.

The project also includes significant water conservation measures that are expected to reduce water consumption at the base by 32.6M gal/year. Altus replaced toilets, flush valves and aerators with low-flow equipment. They also redesigned the golf course's irrigation system, which relies on a rainwater retention pond for the sprinklers. When low rainfall makes it necessary to pump in city water, it goes into an underground storage tank, rather than the pond, to minimize evaporation.

"Our main mission at Altus is to support our employees and our troops and their families," Mr. Howard said. "This project allows us to meet the diverse needs of the nearly 5,000 people we support in the most efficient and cost-effective way."

Maj Davis is the Operations Flight chief, 97th CES, Altus AFB, Okla.

RED HORSE Squadrons Unite in the Fight

RED HORSE squadrons from around the globe are combining forces at Osan AB to improve the quality of life for military members and safety conditions for Airmen and aircraft in South Korea.

Engineers from Osan's 554th RHS have worked closely with Guard, Reserve and active duty units from the 307th RHS at Barksdale Air Force Base, La.; 555th RHS and 820th RHS at Nellis AFB, Nev.; and the 254th CES from Andersen AFB, Guam, on several construction projects since April.

"In total, we have about 170 HORSE brothers and sisters supporting us and rotating through Korea from April through September (this year)," said CMSgt Jeff Slocum, 554th RHS operations chief. "Some are just doing their two-week annual tours, while others are staying on for a while, which helps provide additional continuity on the jobs."

"RED HORSE is all about diversity. Although considered a civil engineer unit, only two-thirds of the squadron personnel carry a (civil engineer) AFSC," said Lt Col Richard Sloop Jr., commander of the 554th RHS. "The remainder makes up the support element that allows RED HORSE to be a self-sufficient operation. With our Reserve and Guard component, we also pick up contracting, security forces and medical personnel."

Completed projects across the peninsula include construction at air bases at Kimhae, Wonju, Suwon, Kunsan and Osan.

"(At Kunsan), we replaced old expeditionary aircraft arresting systems," said CMSgt Slocum. "We (also) built access roads, drainage culverts and buildings to house the arresting engines. The new system is motor-driven and provides for a smoother, more controlled engage-

ment. Basically, it improves operational safety for any aircraft with barrier engagement capability, which better protects the aircraft and pilot during a barrier engagement."

One of RED HORSE's primary wartime responsibilities is to provide aircraft launch and recovery capabilities wherever the Air Force needs it, said Osan project engineer 1Lt Theresa White. "It was great that we (had) the chance to upgrade Kunsan's barrier system. We got to hone our skills for war, and the 'Wolf Pack' [knows] they have a better system in place to more safely support sortie take off and landing operations."

Some of the many projects included two steel arch warehouse buildings at Kimhae that will provide security and weather protection for RED HORSE and war reserve materiel; 30 contingency cabins at Kunsan



to support air expeditionary force rotations, joint exercises, and operations; and a shower, latrine and laundry facility at Suwon which improves quality of life for deployed forces.

**SSgt Andrea Knudson
51st FW/PA**

SSgt Shawn Vanzandt pours cement at the barrier system on the flightline at Kunsan AB, Republic of Korea. SSgt Vanzandt is a heavy equipment operator with Osan's 554th RHS. (photo by SSgt Scottie T. McCord)

"It's great to have such tremendous support from each of these units. We called for help, and they came running," CMSgt Slocum said. "The RED HORSE community is a very tight-knit family. The camaraderie among the people from all the units is fantastic. They work together, play together, and just blend very well to get the job done. Having all of us working together is definitely a production and morale booster."

Injured EOD Tech Wants to Stay On Duty

Mr. Michael Briggs
12th FTW/PA

If disarming bombs could be considered “average” for anyone outside the explosive ordnance disposal career field, then SrA Dan Acosta and the rest of his team had an average day on December 7, much like most of the previous 90 or so days they had spent in and around Baghdad.

SrA Acosta says he remembers everything up to the last mission of the day, and then his mind has a six-day blank that others have since helped fill in with the life-changing events that unfolded that day in western Baghdad.

The 21-year-old Airman from Joliet, Ill., was part of an EOD team from the 447th Expeditionary Civil Engineer Squadron dispatched to locate and disarm a suspected improvised explosive device. While the team was on the scene, there was an explosion.

That's where SrA Acosta's memory of December 7 ends.

The bomb had exploded within 20 feet of him, knocking him to the ground and injuring him severely. He lost his left arm in the blast and his legs suffered extensive wounds.

Despite life-threatening injuries, SrA Acosta's teammates have since told him he jumped to his feet immediately after the blast.

“I only remember up to the explosion, but from what I've been told, apparently I got up right away and was concerned about everybody else, because I didn't realize it had blown up on me,” he said. “I told everyone to back out and asked if anyone was hurt. When I tried to walk, I immediately collapsed due to the injuries to my legs.”

That's when SSgt Joseph Upton stepped in to render first aid. He's a certified combat life-saver who was deployed with SrA Acosta and eight other EOD specialists from their home unit, the 775th CES at Hill AFB, Utah.

“I lost my arm instantly, so he stopped the bleeding there and then wrapped up my legs,” SrA Acosta said. “With the amount

of blood I was losing and at the rate I was losing it, I wouldn't have made it had he not done what he did.”

“The first thing I remembered after the explosion was waking up in the hospital here in San Antonio on Dec. 13, six days later,” he said.

His wife, Sandy, had been at his bedside since his arrival; after the disorientation passed, she told him what had happened to him.

SrA Acosta credits SSgt Upton with saving his life, his wife for getting him through the toughest times since then, and the doctors, nurses and therapists at the medical center for getting him on the road to recovery.

He's had skin grafts to repair the damage to his legs and was fitted in late January with an electronic prosthetic left arm. He now faces about 18 months of rehabilitation. And then he wants to do more than just be healed and healthy. He wants to stay in the Air Force in the EOD career field.

That may surprise some people who hear what he's been through, but to both SrA Acosta and Sandy, the decision wasn't a hard one to make.

“I love everything about the Air Force and EOD, and that's what I want to continue to do,” he said.

His wife said she knew before they even discussed the subject a few days into his recovery that's how he felt.

“I know he loves what he does, so I couldn't picture him getting out and doing something else besides EOD,” she said. “The Air Force has treated us very well and everyone has been so supportive, which is a big part of the reason we want to stay in.”

While the process to determine if he is even eligible to remain on active duty is still a long way off, SrA Acosta is focusing on that goal as he goes through some tough



SrA Acosta is learning how to use his electronic arm, with the help of Army Capt James Watt, an occupational therapist. (photo by Mr. Steve White)

and sometimes frustrating physical therapy sessions. He said his wife and two daughters are the reason he has come through the ordeal with a positive attitude.

His other family—the Air Force family—provided much of his desire to remain an Airman, he said.

“You always hear about how the Air Force is a family and how close we are,” SrA Acosta said. “We never really experienced that until this situation. The Air Force does come together as a family and take care of its people, which is great. That support is what helps with this rehab.”

As he felt better, SrA Acosta has begun to spend some time helping out his family liaison officer, SMSgt Mark Hepner, who is the EOD functional manager at Air Education and Training Command headquarters.

“I wanted to get back in the swing of things,” he said. “I feel comfortable enough to get in uniform and go to work. It helps him out a lot, and he appreciates it. He gets me involved to keep me in touch with EOD and the Air Force.”

That EOD and Air Force involvement is one he said he’d like to experience for a long time. With a successful rehabilitation, he will position himself to give it his best shot probably sometime in late 2007 when a medical board will meet to decide his Air Force future. He has other choices if remaining on active duty is not an option, such as taking a job teaching at the EOD schoolhouse as a civilian.

Until that decision time arrives, he said he’s not taking anything for granted these days and is enjoying spending time with his family—his wife and children and his Air Force family.

Dover Reaches Environmental Milestone

The beginning of the end of Dover AFB's 17-year environmental cleanup was marked by a pen, as Air Force, federal and state officials signed a record of decision document at the Delaware base on May 12.

The ROD, which approves the method to be used to clean up the last of Dover's 59 contaminant release sites, was signed by Brig Gen Del Eulberg, Director of Installations and Mission Support for Air Mobility

ance with all environmental requirements and maintaining the highest standards," said Brig Gen Eulberg.

To speed up gaining regulatory approval, base environmental experts, working with AMC, EPA and Delaware Department of Natural Resources and Environmental Control officials, tackled the approval process to see where bureaucratic waste could be eliminated. Previously, each ROD was worked individually.

"We are committed to having remedies in place at all clean-up sites by fiscal year 2012," Brig Gen Eulberg said. "And Dover is showing that we can meet that objective."

Of the 59 contaminant release sites identified at Dover, 45 were contaminated with hazardous chemicals, primarily chlorinated solvents, which were widely used from the 1950s to the early 70s for cleaning parts. After the signing ceremony, one of the new clean-up technologies—accelerated anaerobic biodegradation—was demonstrated. In this process, a food source for native bacteria (a vegetable oil, sodium lactate and water mixture) is injected into the ground at previously determined levels and the bacteria then metabolize the contaminants into inert compounds. These sites are monitored and re-injected if necessary.



Brig Gen Del Eulberg, HQ AMC Director of Installations and Mission Support, Mr. William T. Wisniewski, Deputy Regional Administrator for the EPA's Mid-Atlantic Region, and Mr. James Werner, Director of the Division of Air and Waste Management at Delaware Department of Natural Resources and Environmental Control, sign a record of decision agreement at Dover AFB, Del. Final clean-up remedies will be in place at all of Dover's 59 clean-up sites within the next five months. (photo by Mr. Roland Balik)

Command at Scott AFB, Ill., and state and federal environmental officials. On the Superfund National Priorities List since March 1989, Dover now has all sites in the clean-up phase of the restoration process, with remedies either under construction, in place and operating, or completed for all 59 sites.

"The Dover Restoration Team shaved months off of the completion schedules through the use of better processes, better partnering and better technologies, while at the same time ensuring compli-

Under the new relationships forged between the agencies, multiple RODs could be worked simultaneously.

"This streamlining effort resulted in the completion of six records of decision within six months...a first for the Air Force," said Mr. William Barry, chief of HQ AMC's Environmental Programs Division. "It is not unusual for a ROD to take two years or more to complete."

One priority of accelerating the restoration was to return the contaminated land to the Air Force for use.

"Of the remaining 19 sites requiring groundwater cleanup, we've already implemented remedies at eight of those sites, we are right now installing remedies at nine more, and we start work at the remaining two sites—the two in today's record of decision—next month," said Ms. Jo Anne Deramo, the 436th Civil Engineer Squadron's Restoration Manager. "Our goal is to have all remedies in place at all sites by the end of September."

Compiled from articles by 2Lt Chris Sukach and MSgt Steve Marciak, 436th AW/PA, Dover AFB, Del.

Energy Program Wins Again

On May 17, the Air Force Facility Energy Program was given the Environmental Protection Agency's 2006 Climate Protection Award, in acknowledgment of the Air Force's significant contribution to the reduction of greenhouse gasses. Last year the Air Force became one of the first organizations in the world to purchase more than 1M megawatts of renewable energy, an amount equivalent to an annual reduction of 1.38B pounds of carbon dioxide emissions, according to EPA estimates.

The Air Force is the federal government's leader in energy conservation and renewable energy usage and earlier this year, received the EPA's Green Power Partner of the Year Award.



Pictured, left to right: Dr. Ronald Sega, Undersecretary of the Air Force; Dr. Kathleen Hogan, Director, EPA's Climate Protection Partnerships Division; Lt Col Brian Weidmann, Chief, Readiness Installation Support Branch, USAF/A7; and Mr. Michael Aimone, Assistant Deputy Chief of Staff for Logistics, Installations and Mission Support, USAF. (photo by Mr. Bob Burgess)

Housing Privatization Embraces Smart Ops 21

The Air Force housing privatization process is taking a leaner, more efficient approach to getting the job done by developing one central management center led by The Air Force Civil Engineer, Air Force officials said recently.

"The secretary of the Air Force challenged us to find a better way to manage and broker deals and successful projects," said Col Michael Smietana, chief of Air Force housing.

After the secretary of the Air Force's challenge, two teams came together to review their privatization processes. Among the areas needing improvement, the organization had 123 approval processes that housing privatization managers had to navigate.

"Many different actions needed to be accomplished in order to create the new, leaner organizational process," said Maj Bo Bloomer, Air Force housing manager. "Many non-value steps were eliminated, like the duplicated design review of projects at higher headquarters. Steps like those were not needed, created waste through the system and impacted the organization's productivity."

With that in mind, a central management center is being put together to ease the process of developing and maintaining privatization deals around the Air Force.

"The consolidated program office, under leadership of The Air Force Civil Engineer, will lead the privatization effort through very close coordinated working relationships with installation commanders and their housing offices," Maj Bloomer said.

Col Smietana said that the center's establishment, along with changes in the process, will bring consistency throughout Air Force housing.

"We found that with the previous process, the end products were not the same," he said. "While they were all good, some were better than others. Now, an Airman can go base to base with privatized housing and know what to expect in size, quality and type of housing. By using Smart Ops in our process, we have smaller teams of people working for a bigger and better result."

SSgt Julie Weckerlein
Air Force News Service

CE's Song Makes Finals



A1C Class Virgil Werley, a firefighter with the 35th Civil Engineer Squadron at Misawa AB, Japan, was one of 20 finalists in the Songs from the Soul of Service songwriting contest. The 27-year-old Garland, Texas, native started writing music at 14. His song "Long Gone" was one of three selected as finalists in the instrumental category. The contest, sponsored by the Dallas Songwriters Association in Texas and the Department of Defense's America Supports You campaign, received over 400 entries from service members stationed in countries around the world, including the United States, Japan, South Korea, Germany, and Iraq and Afghanistan. Music industry professionals will make a CD of the best songs, the proceeds from which will help support charities benefiting military personnel and their families. *(Excerpt from an article by Patrick Dickson, Stars and Stripes; U.S. Air Force photo)*

4th Annual Lineman's Rodeo Provides Amped-Up Competition for Pole Jocks

The 366th Training Squadron claimed the individual score trophy in the Fourth Annual Lineman's Rodeo May 20 in the electrical systems rodeo training area at Sheppard AFB, Texas.

But the 375th Civil Engineer Squadron from Scott Air Force Base, Ill. took home their third consecutive team score trophy.

The rodeo is a chance for electrical systems craftsmen Air Force and Defense Department-wide to demonstrate their skills and speed in various tasks associated with their career field. More than seven teams competed in the tournament, including participants from five Air Force and two Army installations.

Trophies were awarded both for highest team score and highest cumulative individual scores. The 375th CES took first place in the hurt-man rescue, second place in installing equipotential ground sets, and second place in constructing collar ropes. The 375th CES is the reigning champion, taking home the trophy for best overall score for the past two years.

The trophy was presented to the 375th CES by Maj Gen L. Dean Fox, The Air Force Civil Engineer.



A competitor works to replace an insulator during the Lineman's Rodeo. (story and photo by SrA Tonnette Thompson, 82nd TRW/PA)

CEs Deploy to Help Washoe Nation

“We will help each other to protect and preserve the land, water and air for our generations to come.” So goes a Washoe American Indian tribal creed.

This creed was kept alive by several Air Force Reserve Command civil engineer units that deployed to the Washoe Indian Reservation near Carson City, Nev., as part of the Civil-Military Innovative Readiness Training program. The 12-week project to rebuild portions of the reservation community began on March 29 and was one of three such projects going on throughout the country.

CE units from Maryland, Oregon and Ohio deployed about 150 reservists to the reservation to help finish building a 5,100-square foot Head Start facility, renovate a 2,100-square foot convenience store into a tribal wellness center, pave a parking lot, and build a home for an elderly, handicapped tribal member.

Thirty reservists from the 939th CES, Portland, Ore.—engineering assistants; electricians; plumbers; heating, ventilation and air-conditioning specialists; structures specialists; and heavy equipment operators—were the first to arrive; they began work on the Head Start building and the wellness center.

“The Head Start building was started and then sat for six years unfinished,” said CMSgt Kenneth Woody, project manager. “We had to make corrections to the building and redo doorways, kitchen plumbing and some wiring. We hung about 300 pieces of sheetrock to make four classrooms, a kitchen, administrative offices and two full-size children’s bathrooms. [We] poured concrete for sidewalks, ran some additional wiring, installed air-conditioning systems and finished the playground.”

Work by the reserve CEs will allow the Head Start program to increase enrollment to 65 children and free up the tribe’s community center, which was co-opted for the program.

While the communities near Carson City appreciate the reservists’ service, the CEs are getting excellent training.

Ms. Ruby Zarzyczny
939th ARW/PA

“Everything we’re doing here helps us learn and improve the skills we’ll need to do both peacetime and wartime missions,” said SMSgt Steve Watson, squadron utilities superintendent. “It also gives us a chance to work as a team and get to know the people we’re working with.”

While the reservists get great training, the tribe gets to save money.

“We have patients here with some major medical conditions who need to be taken care of, so we try to save every penny we can for them,” said Mrs. Maryjane Bean, Washoe Heath Center administrative assistant.

“Having the Air Force Reserve help us with the wellness center has sped up the building time and saved us \$20,000. That is a substantial amount of money that we desperately need to use for our patients.”



TSgt Cory Gillas, 939th CES, Portland, Ore., compacts the ground before building the frames and pouring concrete to make sidewalks at the Washoe Indian Reservation’s Head Start building. (photo by the author)

Key Personnel Changes

Office of The Civil Engineer, Headquarters United States Air Force, Washington, D.C.

Col John S. Medeiros will become Chief, Programs Division. He was formerly The Civil Engineer, Headquarters Air Force Space Command, Peterson AFB, Colo. He replaces Col Mark Pohlmeier, who will become The Civil Engineer, Headquarters Air Education and Training Command.

Col Juan Ibanez, Jr. will become Chief, Readiness Plans Division, replacing Col Hal Tinsley. Col Ibanez was formerly the Commander, 18th Civil Engineer Group, Kadena AB, Japan. Col Tinsley will become Director, Business Transformation, Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, Washington, D.C.

Col Liesel A. Golden will become Chief, Environmental Division, moving from the Defense Threat Reduction Agency, Arlington, Va. She replaces Col John A. Cawthorne, who will become Base Transfer Officer at a U.S. Central Command forward location.

Major Commands

Col Mark D. (Drew) Wright will become the Deputy Director, Installations and Mission Support, Headquarters Air Combat Command, Langley AFB, Va., replacing Col Neal B. McElhannon, who will become the Vice Commander, 88th Air Base Wing, Wright-Patterson AFB, Ohio. Col Wright was formerly The Civil Engineer, Headquarters Air Force Special Operations Command, Hurlburt Field, Fla.

Col Steven E. Hoarn will become The Civil Engineer, Headquarters Air Force Special Operations Command, Hurlburt Field, Fla. He was formerly the Chief, Civil Engineer Operations Division, Headquarters Pacific Air Forces, Hickam AFB, Hawaii.

Col Bobbie L. Griffin, Jr. will become Deputy Director of Installations and Mission Support, Headquarters Air Force

Space Command, Peterson AFB, Colo. He was formerly Associate Director of Resources, Office of Resource Integration, Headquarters United States Air Force, Washington, D.C. He replaces Col Marvin N. Fisher, who retired.

Col Carlos Cruz-Gonzalez will become The Civil Engineer, Headquarters Air Force Space Command, Peterson AFB, Colo., replacing Col Medeiros. Col Cruz-Gonzalez was formerly Commander, 435th Civil Engineer Group, Ramstein AB, Germany.

Mr. David H. Dentino will become the Deputy Civil Engineer, Headquarters Air Education and Training Command, Randolph AFB, Texas, replacing Mr. Michael Bratlien.

Col Leonard A. Patrick will become the new Director, Installations and Mission Support, Headquarters Air Mobility Command, Scott AFB, Ill. He was formerly The Civil Engineer, Headquarters Air Education and Training Command.

Field Operating Agencies

Col Richard A. Fryer, Jr. will become the Commander, Headquarters Air Force Civil Engineer Support Agency, Tyndall AFB, Fla. He was previously Executive Director and Military Commander, Headquarters Air Force Center for Environmental Excellence, Brooks City-Base, Texas. He replaces Col Gus G. Elliott, Jr., who is retiring.

Col Patrick J. Smith will become the Executive Director, Headquarters Air Force Center for Environmental Excellence, Brooks City-Base, Texas. He was formerly the Commander, Air Force ROTC Detachment 835, Denton, Texas.

Col Leslie C. Martin has left the position of Director, Engineering Support, Headquarters Air Force Civil Engineer Support Agency, Tyndall AFB, Fla. to become Commander, 347th Mission Support Group, Moody AFB, Ga.

Continuing Education

AFIT

Wright-Patterson AFB OH

Course No.	Title	Off.	Start Dates	End Dates
WMGT 424 (S)	Real Property Management	06A	14-Aug	18-Aug
WESS 200	Protocol Fundamentals	06C	15-Aug	15-Aug
WENG 520	Comprehensive Planning Development	06B	21-Aug	25-Aug
WENV 222	Hazardous Materials Management Process	06C	21-Aug	25-Aug
WENV 416	Advanced Environmental Management	06A	21-Aug	25-Aug
WMGT 102	Intro to BCE Org. for Reserve Forces	06B	21-Aug	01-Sep
WMGT 570	CE Superintendent	06D	21-Aug	01-Sep
WENG 440 (S)	Roofing Design and Management	06A	28-Aug	01-Sep
WMGT 585	Contingency Engineer Command	06B	28-Aug	01-Sep
WENG 555 (S)	Airfield Pavement Construction Inspection	06B	11-Sep	15-Sep
WMGT 444 (S)	Competitive Sourcing	06A	05-Sep	08-Sep
WENV 220 (S)	Unit Environmental Coordinator	06C	11-Sep	15-Sep
WMGT 446 (S)	Utilities Privatization	06A	18-Sep	22-Sep

Resident courses are offered at Wright-Patterson AFB, Ohio. Registration begins approximately 90 days in advance. Students should register for CESS courses through the online registration process. Visit the CESS Web site at <http://www.afit.edu> (under Continuing Education) for satellite and Web classes.

366th Training Squadron

Sheppard AFB TX

J3AWR3E453-01AA	Pest Management Recertification	28-Aug/11-Sep	01-Sep/15-Sep
J3AZR3E050-001	CE Work Estimating	11-Sep	29-Sep
J3AZR3E051-003	Cathodic Protection Maintenance	30-Aug	13-Sep
J3AZR3E451-004	Fire Suppression Systems Maintenance	03-Aug/24-Aug/19-Sep	23-Aug/14-Sep/10-Oct
J3AZR3E051-007	Airfield Lighting Systems	30-Aug	11-Sep
J3AZR3E051-008	High Voltage Systems Maintenance	14-Aug/18-Sep	11-Sep/16-Oct
J3AZR3E071-001	CE Advanced Electrical Troubleshooting	03-Aug/31-Aug	30-Aug/28-Sep
J3AZR3E151-015	HVAC-R Indirect Expansion Systems	11-Aug	30-Aug
J3AZR3E471-101	BB Water Purification & Distr. Sys Maint.	09-Aug/23-Aug/13-Sep	18-Aug/01-Sep/22-Sep
J3AZR3E472-00AA	Liquid Fuels Storage	21-Aug/05-Sep/18-Sep	31-Aug/15-Sep/28-Sep

Gulfport MS

JCAZP3E351-02AA	Metals Layout Fabrication & Welding	05-Sep	22-Sep
JCAZP3E351-01AA	Roof Install. Maint. Inspection & Repair	07-Aug/11-Sep	17-Aug/21-Sep

Ft. Leonard Wood MO

J3AZP3E571-005	Construction Materials and Testing	05-Sep	15-Sep
J3AZP3E971-003	Advanced Readiness	18-Sep	22-Sep
J3AZP3E971-005	NBC Cell	21-Aug/25-Sep	25-Aug/29-Sep
JCAZP3E571-01AA	Construction Surveying	18-Sep	29-Sep

312th Training Squadron

Goodfellow AFB TX

Rescue Tech II	07-Aug/11-Sep	25-Aug/29-Sep
Fire Officer II	07-Aug/23-Aug/25-Sep	22-Aug/08-Sep/11-Oct
Fire Officer IV	11-Sep	22-Sep
Fire Inspector I	21-Aug/11-Sep	01-Sep/22-Sep
Fire Inspector II	07-Aug/25-Sep	18-Aug/06-Oct
HAZMAT T-n-T	01-Aug/05-Sep	28-Sep/02-Oct
HAZMAT Awareness	06-Sep	08-Sep
Weapons of Mass Destruction	26-Sep	13-Oct
Fire Instructor III	18-Sep	22-Sep
Fire Marshall	01-Aug/19-Sep	03-Aug/21-Sep
Airport Firefighter	12-Sep	28-Sep

Additional course information is available at <https://webm.sheppard.af.mil/366trs/default.htm> or <https://etca.randolph.af.mil>.

Students may enroll on a space-available basis up until a class start date by contacting their unit training manager.

Additional course information for the 312th TRS is available at http://www.goodfellow.af.mil/Training_Group/312TRS/newfire/index.htm. Students must go through their MAJCOM CE staff to obtain training slots



TSgt Maryann Sawyer, 555th RED HORSE Squadron, makes final tent set-up adjustments during a bare base build-up exercise at Nellis AFB, Nev. The operation consisted of beddown and construction operations for 120 Airmen. The camp also included a mobile field kitchen with generators, reverse osmosis water purification units and field latrine equipment.
(text and photo by MSgt Kevin J. Gruenwald)